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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,859	12/21/2001	Thomas M. Worth	DPL-020	4031

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EXAMINER

HAM, SEUNGSOOK

ART UNIT PAPER NUMBER

2817

DATE MAILED: 11/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**DETAILED ACTION**

***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-22 are, drawn to a microwave radiation device, classified in class 333, subclass 219.
- II. Claims 23-39 are, drawn to a method for making a microwave radiation device, classified in class 228, subclass 164.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the specific bonding method or metal fitting method recited in claims 23-39 are not necessary for the device of microwave radiation recited in claim 1. For example, the microwave radiation device recited in claim 1 can be made by forming a groove in a substrate and placing a metal strip on the groove.

Because these inventions are distinct for the reasons given above, have acquired a separate status in the art as shown by their different classification, and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Jamie H. Rose on November 8, 2002 a provisional election was made with traverse to prosecute the invention of Group I,

**Office Action Summary**

Application No.

10/036,859

Applicant(s)

WORTH ET AL.

Examiner

Seungsook Ham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 March 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 23-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

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claims 1-22. Affirmation of this election must be made by applicant in replying to this Office action. Claims 23-39 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the subject matter of claim 14 (i.e., interference fit) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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Claims 1-22 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In claim 1, line 5, "a metal fitting" has not been clearly defined in the specification in order to understand the invention. The scope of the term, "metal fitting" has not been clearly defined, thus, one skilled in the art would not know how to make the applicant's claimed invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, "a metal fitting conforming to the defined shape" is confusing as to whether it recites a method step or a structural limitation.

In claim 22, "compatible thermal behavior" cannot be understood as to what would be considered as "compatible".

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1, 2, 4, 5, 10, 12, 13, 15 and 19-22 are rejected under 35 U.S.C. 102(b) as being anticipated by McCoubrey (US '078, insofar as understood).

McCoubrey (figs. 1 and 2) discloses a microwave resonant cavity comprising: an insulating substrate 14 that defines the shape of a surface for reflecting microwave radiation 15, a metal fitting 12 conforming to the defined shape, and provide the surface that reflects microwave radiation.

Regarding claim 4, the metal 12 functions as a reflector since it reflects microwave radiation.

The subject matter of claims 10, 12, 15 and 19-22 are inherent from the device of McCoubrey since it teaches that the metal 12 is formed by brazing (e.g., machined).

The subject matter of claim 13 is inherent from the device of McCoubrey since the metal 12 is made of copper.

Claims 1, 4, 5, 13, 15 and 19-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Weill (US '842, insofar as understood).

Weill (figs. 5 and 6) discloses a microwave resonant cavity comprising: an insulating substrate 5 that defines the shape of a surface for reflecting microwave radiation, a metal fitting 6 (i.e., shrink-fitting) conforming to the defined shape, and provide the surface that reflects microwave radiation.

Regarding claim 4, the metal fitting 6 functions as a reflector since it reflects microwave radiation.

The subject matter of claim 13 is inherent from the device of Weill teaches the cylinder 6 is metallic.

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Regarding to claims 15 and 19-22, Weill also teaches that the line support cylinder 1 and the cover 5 is machined and also provides sufficient thermal expansion (col. 2, lines 42-65).

Claims 1, 4, 5 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Chatelain et al. (US '351, insofar as understood).

Chatelain et al. (figs. 1-3) discloses a microwave resonant cavity comprising: an insulating substrate 14' that defines the shape of a surface for reflecting microwave radiation, a metal fitting 12 (i.e., embedded, col. 2, lines 26-30) conforming to the defined shape, and provide the surface that reflects microwave radiation.

Regarding claim 4, the metal fitting 12 functions as a reflector since it reflects microwave radiation.

The subject matter of claim 13 is inherent from the device of Chatelain et al. teaches the conductor 12 is metallic.

Claims 1, 4, 5, 12, 13 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakada (US '789, insofar as understood).

Nakada (figs. 1A-1E) discloses a microwave resonant cavity comprising: an insulating substrate a2 that defines the shape of a surface for reflecting microwave radiation, a metal fitting a1, a3 (i.e., by molding) conforming to the defined shape, and provide the surface that reflects microwave radiation.

Regarding claim 4, the metal fitting a1 functions as a reflector since it reflects microwave radiation.

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The subject matter of claim 13 is inherent from the device of Nakada teaches the conductor a1 is a copper foil.

Regarding claim 16, the metal fitting a3 completely shields the substrate a2 from exposure to the microwave radiation.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 6-9, 11, 14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCoubrey (US '078).

Regarding claims 3, 6 and 7, the specific range of the thickness of the metal fitting is considered as a matter of design choice since the disclosure does not provide any criticality of such range and thus, it requires only routine skill in the art.

Regarding to claims 8, 9 and 22, McCoubrey also teaches about the temperature compensation between the substrate 14 and the metal fitting 12 (col. 2, lines 25-61). Thus, it would have been obvious as a matter of design choice to provide the substrate and the metal fitting having thermal expansions within the ranges recited in claims 8 and 9.

Regarding claim 11, using silver as the metal fitting material is considered as a matter of design choice since silver is well known conductive material.



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The subject matter of claims 14 and 16 are also considered as obvious design modifications since such design techniques are well known in the art.

Claims 2, 3, 6-12, 14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weill (US '842).

Specific ranges of thickness, thermal coefficient expansions, and using different material for the metal fitting are considered as obvious design modification since the disclosure does not provide any criticality of such range and thus, it requires only routine skill in the art.

Claims 2, 3, 6-12, 14-16 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chatelain et al. (US '351).

Specific ranges of thickness, thermal coefficient expansions, and using different material for the metal fitting are considered as obvious design modification since the disclosure does not provide any criticality of such range and thus, it requires only routine skill in the art.

Claims 2, 3, 6-11, 14, 15 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakada (US '789).

Specific ranges of thickness, thermal coefficient expansions, and using different material for the metal fitting are considered as obvious design modification since the disclosure does not provide any criticality of such range and thus, it requires only routine skill in the art.

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Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCoubrey (US '078), Chatelain et al. (US '351), Weill (US '842) or Nakada (US '789) in view of Komachi (US '540).

McCoubrey, Chatelain et al., Weill and Nakada do not show an adhesive layer between the substrate and the metal fitting. However, using an adhesive layer to bond between two layers is well known in the art. Komachi teaches such adhesive layer (col. 3, lines 41-48). Thus, it would have been obvious to one of ordinary skill in the art to provide an adhesive layer between the substrate and the metal fitting for bonding since such technique is well known in the art as taught by Komachi. The specific thickness range is considered as a matter of design choice.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bridges et al. discloses a ring resonator on a substrate (fig. 4);

Hoang, Sirel, Iams, Urien et al. and Grieg et al. disclose a microwave radiation device having different types of metal fitting techniques.

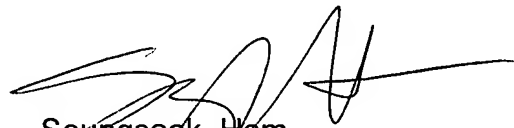
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seungsook Ham whose telephone number is (703) 308-4090. The examiner can normally be reached on Monday - Thursday from 8:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on (703)308-4909. The fax phone

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numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

A handwritten signature in black ink, appearing to read 'Seungsook Ham', is written over the printed name.

Seungsook Ham  
Primary Examiner  
Art Unit 2817

sh  
November 19, 2002